

**COMPLETE LISTING OF CLAIMS, INCORPORATING AMENDMENTS IN
RESPONSE TO OFFICE ACTION DATED 12/14/2005 FOR SERIAL NO. 10/817,413**



We claim:

1. - 13. (Cancelled)

14. (Currently amended) A self-cleaning window assembly ~~for enabling optical access to a combustion environment containing at least one contaminant,~~
comprising:

- a) a transparent base layer having an inner and outer surface, ~~said inner surface exposed to said combustion environment containing said contaminant;~~
- b) a catalytic material attached to said transparent base layer, ~~said catalytic material interacting with said contaminant in said combustion environment for repelling said contaminant from said transparent base layer;~~ and
- c) an oxygen conducting material ~~attached to~~ integral with said transparent base layer ~~for transporting oxygen molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules into said combustion environment.~~

15. (Original) The self-cleaning window assembly as set forth in claim 14, wherein said transparent base layer is selected from a group consisting of: quartz, zirconia, silica, alumina, and titania.

16. (Original) The self-cleaning window assembly as set forth in claim 14, wherein said transparent base layer is electrically conductive.

17. (Currently amended) The self-cleaning window assembly as set forth in claim 14, wherein said catalytic material is ~~comprised of a precious metal based catalyst~~
selected from a group consisting of: gold, silver, platinum or a zeolite.

18. (Original) The self-cleaning window assembly as set forth in claim 14, wherein said catalytic material is comprised of zeolites.

19. (Currently amended) A self-cleaning window assembly, comprising:
a) a transparent base layer having an inner and outer surface, ~~said inner surface exposed to said combustion environment containing said contaminant;~~
b) a means for heating attached to said transparent base layer, ~~said means for heating maintaining said transparent base layer at an elevated temperature for repelling said contaminant from said transparent base layer for enabling optical access through said transparent base layer; and~~
c) an oxygen conducting material ~~attached to~~ integral with said transparent base layer ~~for transporting oxygen molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules into said combustion environment.~~

20. (Original) The self-cleaning window assembly as set forth in claim 19, wherein said transparent base layer is selected from a group consisting of: quartz, zirconia, silica, alumina, and titania.

21. (Original) The self-cleaning window assembly as set forth in claim 19, wherein said transparent base layer is electronically conductive.

22. (Currently amended) A self-cleaning window assembly ~~for enabling optical access to a combustion environment containing at least one contaminant,~~ comprising:

- a) a transparent base layer having an inner and outer surface, ~~said inner surface exposed to said combustion environment containing said contaminant;~~
- b) a catalytic material attached to said transparent base layer, ~~said catalytic material interacting with said contaminant in said combustion environment for repelling said contaminant from said transparent base layer for enabling optical access through said transparent base layer;~~
- c) a means for heating attached to said transparent base layer, ~~said means for heating maintaining said transparent base layer at an elevated temperature for repelling said contaminant from said transparent base layer for enabling optical access through said transparent base layer; and~~
- d) an oxygen conducting material ~~attached to~~ integral with said transparent base layer ~~for transporting oxygen molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules into said combustion environment.~~

23. (Original) The self-cleaning window assembly as set forth in claim 22, wherein said transparent base layer is selected from a group consisting of: quartz, zirconia, silica, alumina, and titania.

24. (Original) The self-cleaning window assembly as set forth in claim 22, wherein said transparent base layer is electrically conductive.

25. (Currently amended) The self-cleaning window assembly as set forth in claim 22, wherein said catalytic material is ~~comprised of a precious metal-based catalyst~~ selected from a group consisting of gold, silver, platinum or a zeolite.

26. (Original) The self-cleaning window assembly as set forth in claim 22, wherein said catalytic material is comprised of zeolites.

27. – 43. (Cancelled)

44. (Currently amended) A self-cleaning window assembly ~~for enabling optical access to a combustion environment containing at least one contaminant,~~ comprising:

- a) a transparent base layer having an inner and outer surface, ~~said inner surface exposed to said combustion environment containing said contaminant;~~
- b) a catalytic/heat transfer material attached to said transparent base layer, ~~said catalytic/heat transfer material interacting with said contaminant in said combustion~~

~~environment for repelling for repelling said contaminant from said transparent base layer~~
~~for enabling optical access through said transparent base layer; and~~

c) an oxygen conducting material ~~attached to~~ integral with said transparent base layer ~~for~~
~~transporting oxygen molecules from said outer surface of said transparent base layer~~
~~through said transparent base layer, through said inner surface of said transparent base~~
~~layer, and depositing said oxygen molecules into said combustion environment.~~

45. (Original) The self-cleaning window assembly as set forth in claim 44,
wherein said transparent base layer is selected from a group consisting of: quartz,
zirconia, silica, alumina, and titania.

46. (Original) The self-cleaning window assembly as set forth in claim 44,
wherein said transparent base layer is electrically conductive.

47. (Original) The self-cleaning window assembly as set forth in claim 44,
wherein said catalytic/heat transfer material is zirconia.

48. (Currently amended) A self-cleaning window assembly ~~for enabling~~
~~optical access to a combustion environment containing at least one contaminant,~~
comprising:

a) a transparent base layer, ~~composed of~~ comprised of an oxygen conducting material,
said transparent base layer having an inner and outer surface ~~for optical access to said~~
~~combustion environment, said transparent base layer further transporting oxygen~~

~~molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules into said combustion environment; and~~

b) a catalytic/heat transfer material, such as zirconia, attached to said transparent base layer, ~~said catalytic/heat transfer material interacting with said contaminant in said combustion environment for repelling said contaminant from said transparent base layer for enabling optical access through said transparent base layer.~~

49. (Original) The self-cleaning window assembly as set forth in claim 48, wherein said transparent base layer is selected from a group consisting of: quartz, zirconia, silica, alumina, and titania.

50. (Original) The self-cleaning window assembly as set forth in claim 48, wherein said transparent base layer is electrically conductive.

51. – 54. (Cancelled)

55. (Currently amended) A self-cleaning window assembly ~~for enabling optical access to a combustion environment containing at least one contaminant,~~ comprising:

a) a transparent base layer, ~~composed of~~ comprised of a heat transfer material, said transparent base layer having an inner and outer surface ~~for optical access to said combustion environment, whereby said heat transfer material allows said transparent base~~

~~layer to be maintained at an elevated temperature in order to assist said transparent base layer in repelling said contaminant; and~~

b) ~~an oxygen conducting material attached to integral with said transparent base layer for transporting oxygen molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules into said combustion environment.~~

56. (Currently amended) A self-cleaning window assembly ~~for enabling optical access to combustion environment, comprising:~~

a) ~~a transparent base layer, composed of comprised of a heat transfer material, said transparent base layer having an inner and outer surface for optical access to said combustion environment, whereby said heat transfer material allows said transparent base layer to be maintained at an elevated temperature in order to assist said transparent base layer in repelling said contaminant;~~

b) ~~a catalytic material attached to said transparent base layer, said catalytic material interacting with said contaminant in said combustion environment for repelling said contaminant from said transparent base layer for enabling optical access through said transparent base layer; and~~

c) ~~an oxygen conducting material attached to integral with said transparent base layer for transporting oxygen molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules into said combustion environment.~~

57. (Currently amended) The self-cleaning window assembly as set forth in claim 56, wherein said catalytic material is ~~comprised of a precious metal based catalyst~~
selected from a group consisting of: gold, silver, platinum or a zeolite.

58. (Original) The self-cleaning window assembly as set forth in claim 56, wherein said catalytic material is comprised of zeolites.

59. (Currently amended) A self-cleaning window assembly ~~for enabling optical access to a combustion environment containing at least one contaminant,~~
comprising a transparent base layer, ~~composed of~~ comprised of a heat transfer material which also conducts oxygen, having an inner and outer surface ~~for optical access to said combustion environment, whereby said heat transfer material allows said transparent base layer to be maintained at an elevated temperature in order to assist said transparent base layer in repelling said contaminant, said transparent base layer further transporting oxygen molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules in to said combustion environment.~~

60. (Currently amended) A self-cleaning window assembly ~~for enabling optical access to a combustion environment containing at least one contaminant,~~
comprising:
a) a transparent base layer, ~~composed of~~ comprised of a heat transfer material which also conducts oxygen, said transparent base layer having an inner and outer surface ~~for~~

~~optical access to said combustion environment, whereby said heat transfer material allows said transparent base layer to be maintained at an elevated temperature in order to assist said transparent base layer in repelling said contaminant, said transparent base layer further transporting oxygen molecules from said outer surface of said transparent base layer through said transparent base layer, through said inner surface of said transparent base layer, and depositing said oxygen molecules into said combustion environment; and~~
b) a catalytic material ~~attached to~~ integral with said transparent base layer, ~~said catalytic material interacting with said contaminant in said combustion environment for repelling said contaminant from said transparent base layer for enabling optical access through said transparent base layer.~~

61. (Currently amended) The self-cleaning window assembly as set forth in claim 60, wherein said catalytic material is ~~comprised of a precious metal-based catalyst~~ selected from a group consisting of: gold, silver, platinum or a zeolite.

62. (Original) The self-cleaning window assembly as set forth in claim 60, wherein said catalytic material is comprised of zeolites.

63. (Withdrawn) A method to monitor emission components within a combustion environment containing at least one contaminant, comprising the steps of:
a) providing a transparent base layer to enable viewing said combustion environment containing at least one contaminant, said transparent base layer having an outer surface and an inner surface which is exposed to said combustion environment,

- b) optionally, providing a catalytic material to repel said contaminant in said combustion environment,
- c) optionally, providing a means for heating to repel said contaminant in said combustion environment, and,
- d) optionally, providing an oxygen conducting material within said transparent base layer to increase oxygen content within said combustion environment, for use in reducing environments.